



## Thale – Agitator drives DIN TRD

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TRD Agitator drives are designed according to DIN 28162 and are working in the following combinations on all reactors according to DIN 28136:

Material	steel, glass-lined	carbon and stainless steel
Drive system flange:	DIN 28137 part 2	DIN 28137 part1
Agitator shaft end:	DIN 28159	DIN 28154
Mechanical seal:	DIN 28138 part 2+3	DIN 28138 part 1+3

Drives for explosion-prone areas are designed in accordance to the EU-Directive 94/9/EG (ATEX 95).

## Modular assembly system

TRD Agitator drives are assembled upon the modular assembly system. That means various drive designs can be delivered by combination of gear box and motor arrangement according to your requirements (e.g. motor adapter, belt drive, bevel-wheel drive). Special design on your request.

## Mechanical seal / Supply system

Compact units according to DIN 28138 with complete supply systems are used:

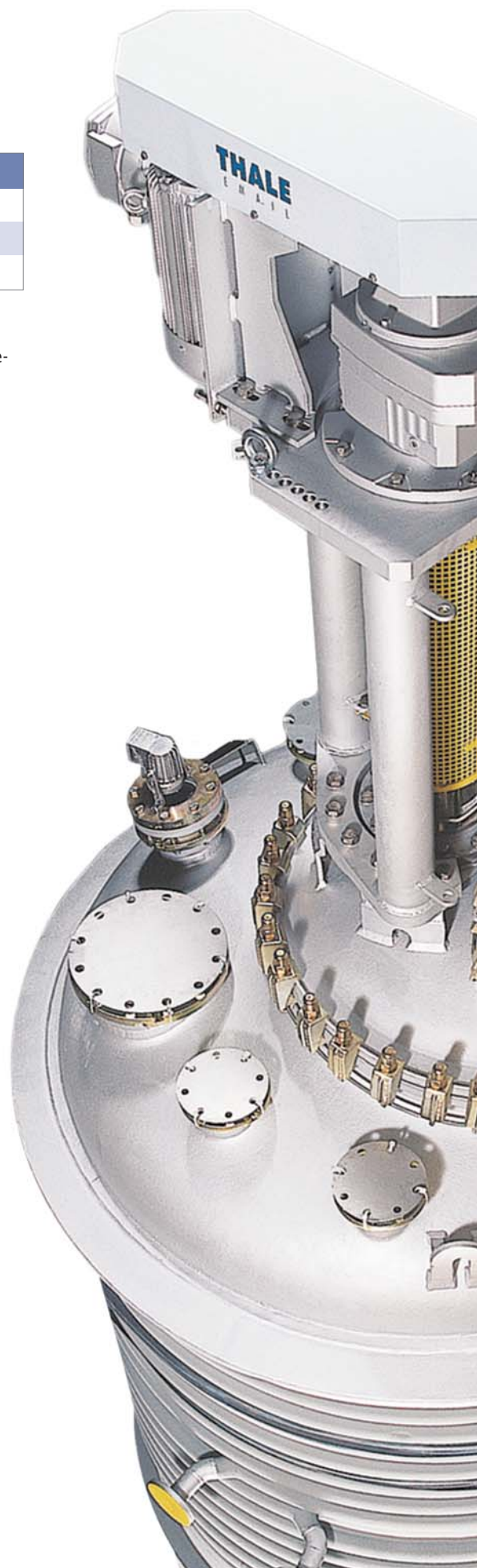
- Liquid sealed double mechanical seal with thermosyphon, if requested a circulation unit with temperature measurement inside the seal housing
- Gas lubricated mechanical seal with buffer fluid circuit
- GMP or sterile mechanical seal with rotating seat for a special shaft end and agitator nozzle in block flange design
- Shaft lip seal – dry-running, non-maintenance assembly without supply system with lip rings made of PTFE-compound and SiC-shaft protection sleeve

## Order example

Denomination of a TRD Agitator drive size 500 with a motor power of 15 kW, lateral removal of the mechanical seal “S” and belt drive “R” between E-motor and spur gears:

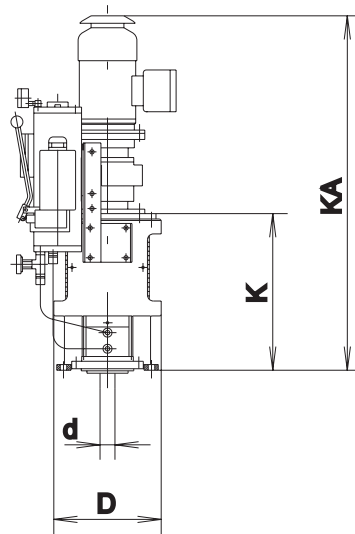
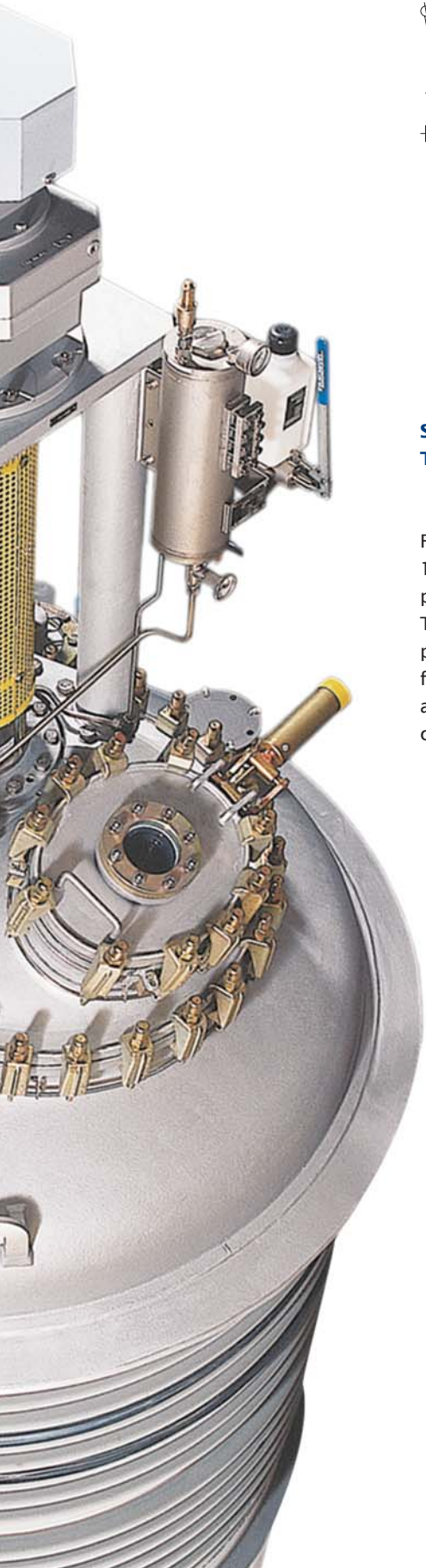
TRD 500 / 15 kW - SR

From size 250 onwards all drives are equipped with an agitator support device, which rests on the drive system flange and fixes the agitator outside the reactor during assembly works.



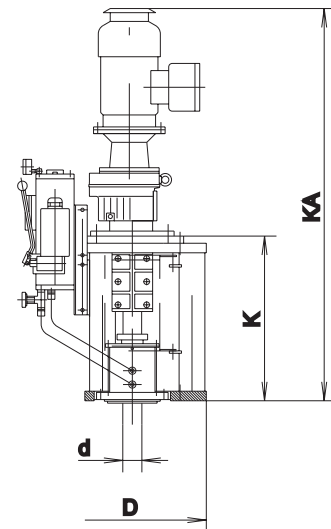


# Drive designs



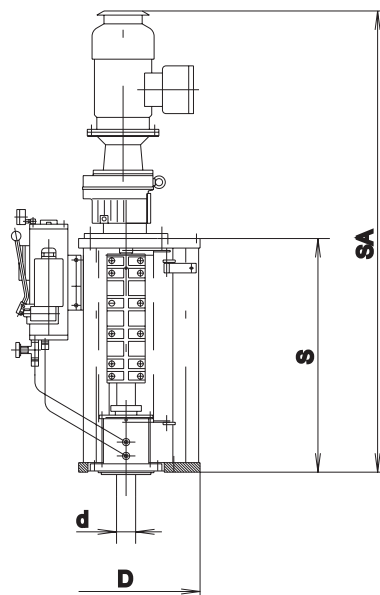
**Short design "K"**  
TRD 125K to 250K

For small reactors with a capacity of up to 1,000 litres small drives with a gear support made of grey cast iron are designed. Their assembly holes are closed with a punched sheet guard. An intermediate flange connects the gear box; the shafts of agitator and gear box are connected by a clamp coupling according to DIN 115.



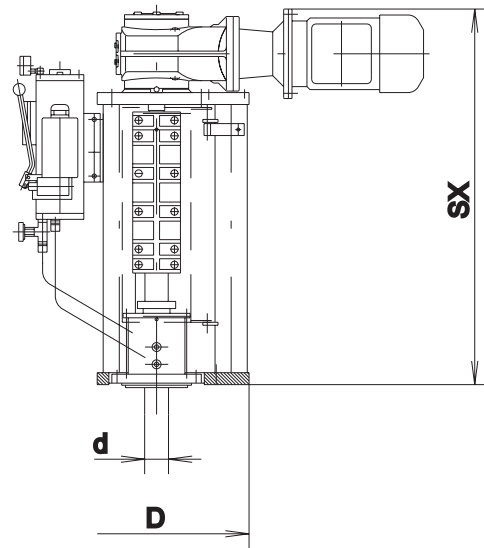
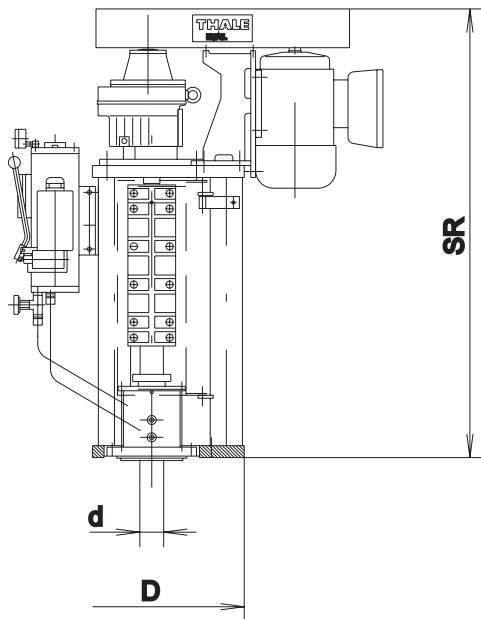
**Short design "K"**  
TRD 300K to 900K

Reactors with a capacity from 1,600 litres onwards are equipped with short drives with a welded gear support. These supports guarantee a greater stability as well as better access during assembly operations. The shafts of the agitator and gear box are connected with a clamp coupling according to DIN 115 as well. All rotating parts are protected with a punched sheet protecting bonnet. The mechanical seal will be disassembled towards the top; therefore the intermediate flange and the gear box need to be removed from the gear support.



**Lateral removal of the mechanical seal "S"**  
TRD 250S to 900S

This design allows the lateral removal of the mechanical seal without disassembling the gear box. The distance between agitator shaft and gear box shaft is according to DIN 28161 and enables the assembly of all mechanical seal elements according to DIN 28138. Both shaft ends are connected with our special THALE-clamp coupling. The lateral removal is optimally supported by a special device (see Assembly instruction).



- “K.” Short design
- “S.” Lateral removal of the mechanical seal
- “A” IEC-adapter
- “R” Belt drive
- “X” Bevel-wheel drive

Reactor BE 8 m<sup>3</sup> with agitator drive  
TRD 500 / 7,5 / 10 kW – SX  
in operation at  
Serumwerk Bernburg GmbH

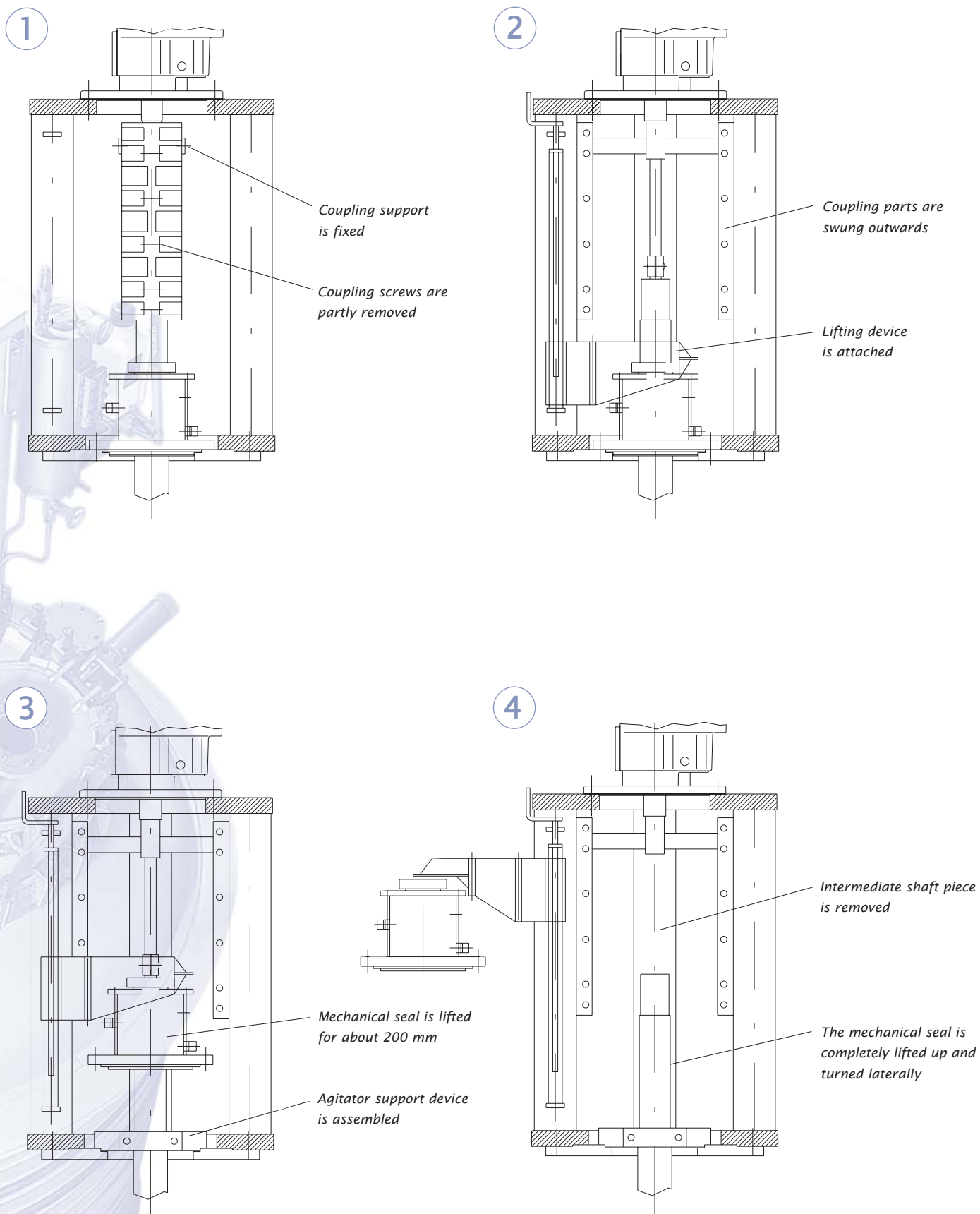


### Dimensions

Motor power for operation with frequency converter

Size	d mm	D mm	K mm	KA mm	KX mm	KR mm	S mm	SA mm	SX mm	SR mm	M <sub>G</sub> Nm	P <sub>M</sub> kW	V <sub>N</sub> m <sup>3</sup>
125	40	270	470	1040	655	835	-	-	-	-	220	1,1	0,063 0,1 0,16
200	50	360	525	1190	764	940	-	-	-	-	700	2,2 3	0,25 0,4
250	60	420	540	1265	852	980	775	1615	1107	1286	700	4	0,63 1
300	80	620	690	1607 1645	950	1190	980	1897 1935	1240	1480	1230	5,5 7,5	1,6 2,5
400	100	780	800	1995	1117	1405	1115	2310	1432	1720	2190	11	4
500	100	780	800	2039 2051	1117	1405	1115	2354 2366	1432	1720	2190	15 18,5	6,3 8
700	125	980	960	2340 2390 2463	1321 1346 1371	1740	1290	2640 2690 2763	1651 1676 1701	2070	8000	22 30 37	10 12,5 16
700	140	980	960	2493 2580	1371 1421	1740	1290	2793 2880	1701 1751	2070	8000	45 55	20 25
900	160	1050	1055	2901 2966	1586	1910	1355	3201 3266	1886	2210	13000	75 90	32 40

# Assembly instruction for laterally replacing the mechanical seal of agitator drives (design "S")



## **Competence-Info-Center**

We would like to advise you regarding the advantages of glass-lined equipment like:

- Reactors
- Glass-lined storage vessels and storage tanks
- RAS GLASS®
- Agitators and agitator systems
- Pipes and fittings
- Columns
- Heat exchangers
- Bottom outlet valves
- Measuring probes
- Reglassing
- Pressure filters
- Service and spare parts
- Reconditioning of used reactors

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